

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said at least two microphones and said signal processing circuitry being configured to limit adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones; and

a case for housing said at least two microphones and said signal processing circuitry, wherein said case is mounted on a mounting side of an acoustical barrier, the acoustical barrier comprising an interior surface of a passenger vehicle.

129. (New) A microphone assembly comprising:

at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

31 signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said at least two microphones and said signal processing circuitry being configured to limit adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones;

a case for housing said at least two microphones and said signal processing circuitry, wherein said case is mounted on a mounting side of an acoustical barrier; and

at least one sealing gasket located between said case and the mounting side of the acoustical barrier.

130. (New) The microphone assembly according to claim 129 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

131. (New) A microphone assembly comprising:

at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said at least two microphones and said signal processing circuitry being configured to limit adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones;

a case for housing said at least two microphones and said signal processing circuitry; and  
at least two protective screens located between an inner surface of the case and the at least two microphones.

132. (New) The microphone assembly according to claim 131 wherein the case is mounted on a mounting side of an acoustical barrier.

133. (New) The microphone assembly according to claim 132 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

134. (New) A microphone assembly comprising:

at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said at least two microphones and said signal processing circuitry being configured to limit adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones;

a case for housing said at least two microphones and said signal processing circuitry, wherein said case is mounted on a mounting side of an acoustical barrier; and

a covering located on at least a portion of a pick-up side of the acoustical barrier.

135. (New) The microphone assembly according to claim 134 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

136. (New) A microphone assembly comprising:

at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal, said signal processing circuitry comprising circuitry for generating at least one pattern signal, said circuitry comprising at least two high-pass roll-off filters and a differencing circuit; and

said at least two microphones and said signal processing circuitry being configured to limit adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones.

137. (New) The microphone assembly according to claim 136 wherein the differencing circuit comprises at least two gain adjusters for trimming out mid-band amplitude sensitivity differences in the at least two microphones.

B1 138. (New) The microphone assembly according to claim 136 further comprising a case for housing said at least two microphones and said signal processing circuitry.

139. (New) The microphone assembly according to claim 138 wherein the case is mounted on a mounting side of an acoustical barrier.

140. (New) The microphone assembly according to claim 139 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

SC 141. (New) A microphone assembly comprising:  
at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;  
signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal and generating an additional output signal having an extended low frequency response in comparison to the assembly output signal; and  
said at least two microphones and said signal processing circuitry being configured to limit adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones.

142. (New) The microphone assembly according to claim 141 further comprising a case for housing said at least two microphones and said signal processing circuitry.

143. (New) The microphone assembly according to claim 142 wherein the case is mounted on a mounting side of an acoustical barrier.

144. (New) The microphone assembly according to claim 143 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

145. (New) A microphone assembly comprising:

at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said signal processing circuitry limiting adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones; and

a case for housing said at least two microphones and said signal processing circuitry, wherein said case is mounted on a mounting side of an acoustical barrier, the acoustical barrier comprising an interior surface of a passenger vehicle.

146. (New) A microphone assembly comprising:

at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said signal processing circuitry limiting adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones;

a case for housing said at least two microphones and said signal processing circuitry, wherein said case is mounted on a mounting side of an acoustical barrier; and

at least one sealing gasket located between said case and the mounting side of the acoustical barrier.

147. (New) The microphone assembly according to claim 146 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

148. (New) A microphone assembly comprising:

at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said signal processing circuitry limiting adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones;

a case for housing said at least two microphones and said signal processing circuitry; and

at least two protective screens located between an inner surface of the case and the at least two microphones.

149. (New) The microphone assembly according to claim 148 wherein the case is mounted on a mounting side of an acoustical barrier.

150. (New) The microphone assembly according to claim 149 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

151. (New) A microphone assembly comprising:

at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said signal processing circuitry limiting adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones;

a case for housing said at least two microphones and said signal processing circuitry, wherein said case is mounted on a mounting side of an acoustical barrier; and

a covering located on at least a portion of a pick-up side of the acoustical barrier.

152. (New) The microphone assembly according to claim 151 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

31 153. (New) A microphone assembly comprising:  
at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;  
signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal, said signal processing circuitry comprises circuitry for generating at least one pattern signal, the circuitry comprising at least two high-pass roll-off filters and a differencing circuit; and  
said signal processing circuitry limiting adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones.

154. (New) The microphone assembly according to claim 153 wherein the differencing circuit comprises at least two gain adjusters for trimming out mid-band amplitude sensitivity differences in the at least two microphones.

155. (New) The microphone assembly according to claim 153 further comprising a case for housing said at least two microphones and said signal processing circuitry.

156. (New) The microphone assembly according to claim 155 wherein the case is mounted on a mounting side of an acoustical barrier.

157. (New) The microphone assembly according to claim 156 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

31 158. (New) A microphone assembly comprising:  
at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal and generating an additional output signal having an extended low frequency response in comparison to the assembly output signal; and

said signal processing circuitry limiting adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones.

159. (New) The microphone assembly according to claim 158 further comprising a case for housing said at least two microphones and said signal processing circuitry.

160. (New) The microphone assembly according to claim 159 wherein the case is mounted on a mounting side of an acoustical barrier.

161. (New) The microphone assembly according to claim 160 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

162. (New) A microphone assembly comprising:

at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said at least two microphones being configured to limit adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones; and

a case for housing said at least two microphones and said signal processing circuitry, wherein the case is mounted on a mounting side of an acoustical barrier, the acoustical barrier comprising an interior surface of a passenger vehicle.

163. (New) A microphone assembly comprising:

at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said at least two microphones being configured to limit adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones;

a case for housing said at least two microphones and said signal processing circuitry, wherein the case is mounted on a mounting side of an acoustical barrier; and

at least one sealing gasket located between said case and the mounting side of the acoustical barrier.

164. (New) The microphone assembly according to claim 163 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

165. (New) A microphone assembly comprising:

B1 at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said at least two microphones being configured to limit adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones;

a case for housing said at least two microphones and said signal processing circuitry, wherein the case is mounted on a mounting side of an acoustical barrier; and

a covering located on at least a portion of a pick-up side of the acoustical barrier.

166. (New) The microphone assembly according to claim 165 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

3CX 167. (New) A microphone assembly comprising:

at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said at least two microphones being configured to limit adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones; and



wherein the at least two microphones have low-frequency cutoff frequencies that are closely matched.

168. (New) The microphone assembly according to claim 167 wherein closely matched comprises mismatches of no greater than approximately 1/15 of the 300Hz lower frequency limit of a useful assembly frequency range.

169. (New) The microphone assembly according to claim 167 further comprising a case for housing said at least two microphones and said signal processing circuitry.

170. (New) The microphone assembly according to claim 169 wherein the case is mounted on a mounting side of an acoustical barrier.

171. (New) The microphone assembly according to claim 170 wherein the acoustical barrier comprises an interior surface of a passenger vehicle.

172. (New) A microphone assembly comprising:

at least two microphones, each of said at least two microphones receiving sound energy and generating electrical signals corresponding to the sound energy received;

signal processing circuitry, said signal processing circuitry processing the electrical signals into an assembly output signal;

said at least two microphones being configured to limit adverse effects on the assembly output signal from amplitude and phase mismatches between the at least two microphones;

a case for housing said at least two microphones and said signal processing circuitry; and

at least two protective screens located between an inner surface of the case and the at least two microphones.

173. (New) The microphone assembly according to claim 172 wherein the case is mounted on a mounting side of an acoustical barrier.